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## Social Sciences Research in Pakistan; Bibliometric Analysis

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# Social Sciences Research in Pakistan; Bibliometric Analysis

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## ABSTRACT

**Aim.** The study aimed to explore the progress of social science research carried out by Pakistan for the duration of 59 years.

**Method:** This retrospective study was carried out on the data retrieved from the Scopus database to determine the research output in the area of social science by Pakistani authors from 1961 to December 2019. The word “Pakistan” has been written in the main search box and “Affiliation” has been selected in the subsequent box. The targeted time duration was selected, further, the social sciences documents were selected and downloaded for data-analysis. Microsoft Excel spreadsheet and SPSS were used to calculate and analyze the data.

**Result:** Pakistani author wrote 9,292 papers on social sciences with an average of 157.49 papers per year, three-fourth of the papers were published in the last ten years of study. These publications received 56,252 citations with an average of 6.05 citations per paper. One-fourth of the total documents were published in the ten most preferred journals and Pakistan Development Review has been on the top with 1067 documents. The Scopus further divided these documents into 24 sub-categories, computer sciences found a most favorite area followed by art and humanities. Pakistani authors collaborated with 134 countries of the world, the United States has a topmost choice for international research collaboration. In the analysis of the authorship pattern, the single author pattern dominated.

**Conclusion:** The establishment of new universities and up-gradation of the social sciences departments, provision of national digital library and starting of doctorate programs are the key factors of promising growth of publications was found during the last ten years of study. Still, we need to do more innovative research with the corporate sector for the betterment of the society.

**Keywords:** Social Sciences; Research Productivity; Publications; Bibliometrics; Pakistan

## INTRODUCTION

Social science is an academic discipline, do and can perform a substantial role in socio-economic progress of society. Bhattacharjee (2012) defines that the subject area of social sciences is dealing with the behavior of individual people and the collective attitude of various groups, societies, firms and economies. Further, the social sciences can be categorized into such as the science of human behavior, known as psychology; the science of social groups known as sociology; the science of market and economies known as economics; the science of running the government known as political sciences; and so on (p.1). Merriam-Webster online dictionary defines social science as;

1: “a branch of science that deals with the institutions and functioning of human society and with the interpersonal relationships of individuals as members of society” 2: a science (such as economics or political science) dealing with a particular phase or aspect of human society.”

Pakistan, the fifth largest country in the world, having a population of 207.8 million. Ahmed (1990) stated that there has been an extraordinary diversity and complexity amongst the people and culture of Pakistan. Pakistani society is going to a transitional period, positive changing and progressive development are taking place in every sphere of life. Masud (2002) traced the history of social sciences in Pakistan. There were two universities in Pakistan having the departments of social sciences in 1947, one was teaching history and the other was economics. During the first decade, the government of Pakistan was more involved in security, finance and constitutional issues, that's why the slow progress was found in the educational sector. Changes started to occur after 1960, the number of social sciences departments in all universities of Pakistan reached on 34 in 1983, and this number reached 110 in 2001. Zaidi (2002) discussed the reasons for the miserable condition of social sciences and its research in Pakistan and suggested a practicable action plan for the improvement of this scenario. This study highlighted the social sciences research activities in Pakistan. Most of the research in the first 13 years had been carried out by foreigners, visiting Pakistan for teaching and advisory services. This paper provided glimpses of the documents produced by Pakistan on social sciences. Oxford University Press, Pakistan published almost 100 books, 24 related to Pakistan History, 19 on the Economic Development, and 10 Pakistani Politics; Vanguard publishers published 80 books and 38 books were related to Central Asia and British India; Sang-e-Meel reprinted the 35 books related to history, written by British colonialists earlier published during British Raj. Study also identified that 22 journals have been published from Pakistan on various aspects of social sciences. Zaman (2008) opined that instead of blind imitation of West in social science education, we need to build our own frames and theories to solve the native social issues. A first-ever conference on social sciences in Pakistan was held at Islamabad in 1988 to discuss the various indigenous issues and concerns of social sciences. Hashmi (2001) compiled a book, entitled “The state of social sciences in Pakistan” based on the 19 papers presented in the conference. This monograph contained the material on political sciences, international relations, public administration, economics, psychology, history, sociology and education. The book chapters highlighted the flaw in social sciences in Pakistan, as colonial educational tradition, low budgetary support, declines of higher education and deterioration of English language competency. Iqbal et al. (2018) asserted that the main liability of higher educational institutions to develop critical thinking, aptitude and expertise of the juvenile generation to play their industrious roles in society. Tufial and Ehsan (2012) opined that the majority of the social sciences research has been conducted by the academic sector as compared to the corporate sector in Pakistan. The government should take dare step to involve the corporate sector in the productive and problem-solving social sciences research. The research outcomes have been measured by its utility for community services.

The Scimago Journal and Country Rank (SJR) is a freely accessible portal developed by the University of the Granada, Spain. SJR has been utilizing the Scopus data to maintain the journals and country indicators. The SJR classified social sciences into 24 following disciplines.

Anthropology; Archeology; Communication; Cultural Studies; Demography; Development; Education; E-Learning; Gender Studies; Geography, planning and development; Health (social sciences); Human factors and ergonomics; Law;

Library and information science; Life-span and life-course studies; Linguistics and language; Political science and international relations; Public administration; Safety research; Social sciences (miscellaneous); Social work; Sociology and political science; Transportation and Urban studies.

According to the statistics of SJR database, 240 countries of the world have produced 58.80 million (n=58,807,729) documents from 1996 to 2019. A share of United States has recorded 21.83% with 12.83 million (n=12,839,607) documents. The segment of social science research counted 3.78 million (n=3,782,947) documents, 6.43% of the global output, 30.18% (1.14 million) of the total social sciences research has been contributed by United States. Pakistan produced 0.17 million (n=1,76,602) documents and has been standing in 45<sup>th</sup> position with a 0.30% share in the global research productivity. Pakistan is contributing 0.21% at global level and 4.65% at the national level in social sciences research.

As the growth of research publications have been increasing, the necessity of evaluating the attributes of research is also getting importance. The application of mathematics and statistics on published items to determine the characteristics of research is known bibliometric. These studies provide meaningful data about publications from raw data. The raw data can be collected manually or through databases like Web of Science, Scopus and PubMed etc. The scope of bibliometric studies has been getting wider day by day and the results of these studies are being utilized by different agencies for multiple purposes (Prichard, 1969; Haq & Al Fouzan, 2017; Iqbal et al., 2018).

The primary intention of this paper is to examine the growth of social sciences research in Pakistan and its' bibliometrics characteristics, based on the data extracted from Elsevier's Scopus database.

## LITERATURE REVIEW

Ahmed (1990) compiled a monograph to present the complex and diverse society of Pakistan, named, *Pakistan: a social sciences' perspective*. The chapters were written by distinguished authors on topics of saints of Sindh, Afghan refugees in Peshawar, Chiefs of Gilgit, rural groups of Faisalabad, sources of moral authority in Punjab, tribalism in Balochistan and more. The various patterns of Pakistani society have been discussed briefly in this book.

Sabir and Sabir (2010) examined the articles produced by social scientists of Pakistan, in the Science Citation Index (SCI) journals from 1966 to 2008. Less than 200 articles were found, 106 articles on Economics, 46 on Demography, 23 on Political sciences, 13 on Anthropology and 2 on History. He discussed the factors of low productivity in social sciences research in Pakistan.

Iqbal et al. (2018) elucidated that Pakistan has produced 2,828 papers on social sciences from 1981 to 2015, and 1,625 (57%) papers were published from the last five years (2011- 2015) of study. Out of 2,828 papers, 805 (28%) were written without collaboration, while 2,023 (72%) were the results of collaborative research. The citation impact of collaborative research found high with 4.36 citations per paper as compared to the documents without collaboration (1.24 citations per document). Globally, the ratio of social sciences research recorded 5.9% of the total research, whereas, in Pakistan, this ratio was just 2.1% of total national research. The majority of research was conducted in the areas of chemistry (15.1%), plant and animal sciences (14.6%) and clinical medicine (13.7%) in Pakistan.

Ahmad (2020) assessed the research productivity of the University of the Punjab, Lahore and compared the result with other three Pakistani and one Indian Universities. As for as, the social sciences research is concerned, the University of the Punjab outclassed the other universities.

Siddique et al. (2020) examined the research output of Pakistan in Library and Information Science from 1957 to 2018. A total of 1,305 articles were found and remarkable growth has been recorded from 2004 to onward. The University of the Punjab found a most productive institution with 381 items, followed by University of Karachi with 175 and maximum of 411 articles were published in Pakistan Library and Information Science Journal.

Rehman (2004) asserted on the basis of qualitative research that the future of psychology would be very brilliant in Pakistan. Wahid and Haroon (2017) applied Bradford's law of bibliometric on the citations pattern of 251 articles, published in the *Pakistan Journal of Psychological Research* from 1986 to 2012. A total of 6,890 references were used, mostly references (58.97%) were taken from journals and 28.55% from books. The ratio of self-citations of the journal and author was found very low.

Jan and Anwar (2017) evaluated the research collaboration in Pakistan in the area of economics. The 39-year data was taken from the *Pakistan Development Review* for 1973 to 2009. A total of 1627 articles were published and the majority of articles were contributed by a single author pattern (n=904; 55.56%) while 723 (44.44%) articles were written by collaborative research. In the analysis of international research collaboration, the United States was found on the top with 22 publications, and the analysis of institutional occurrence in collaborative research, Pakistan Institute of Development Economics was found on the first rank with 340 papers. The highest degree of collaboration was found during the last five years of the study (2005-2009).

Faiz (2020) examined the literature on computer science produced by Pakistan from 2000 to 2017. A total of 15,025 publications were found and these publications received 67,058 citations with an average of 4.48 citations per paper. Only 4% of publications were created by a single author pattern, maximum work was carried out in team work. The National University of Sciences and Technology, Pakistan found most productive research contributing organization (n=3305) followed by COMSATS Institute of Information Technology (n=2246). This study calculated the share of Pakistan in worldwide literature on computer science and found that the share of Pakistan has been 0.29% of the total pool of publications (n=5,126,070). Pakistan produced 72.25 papers per one million populations whereas Singapore has been on the uppermost position with 9488.88 papers per one million populations.

Loan and Shah (2018) assessed the research growth on terrorism by Indian and Pakistani authors on the Web of Science database. Only 105 publications were found, published in 80 journals. India produced 57 while Pakistan 48 articles, and 43% of articles were written by a single author pattern. Internationally collaborated research was found high in Pakistan with six countries as compared to research collaboration with three countries by India.

Saudi Arabia produced 88,506 documents for 1981-2014, and the segment of social sciences research calculated of 1,765 (2%) documents (Shehatta & Mahmood, 2016). Al Fouzan et al. (2019) estimated that 2,020 documents were produced by Al-Imam Mohammad ibn Saud Islamic University of Saudi Arabia for 2009-2018. The ratio of social sciences found 107 (5.32%) documents. Malaysian authors created 290,093 documents for 1995-2015 and 8% of the total research has been conducted on social sciences (Bakri et al. 2017).

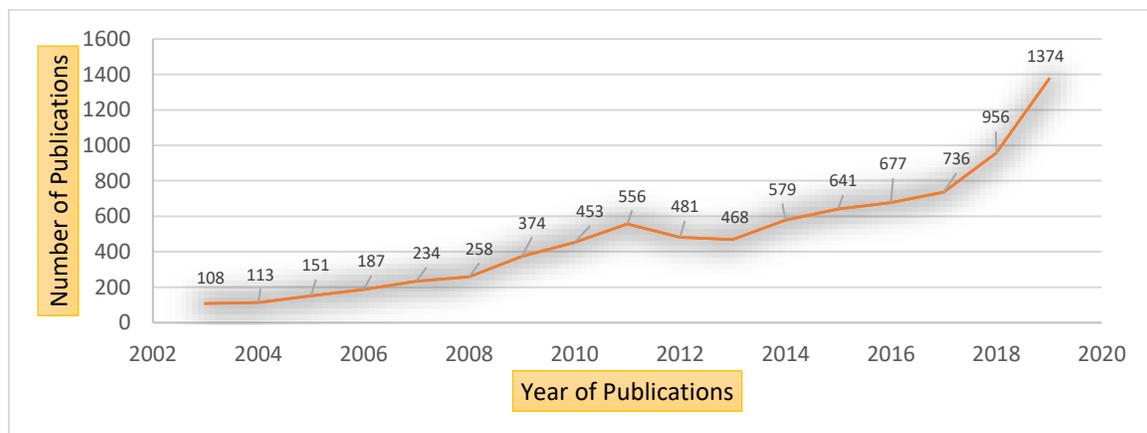
## METHODOLOGY

The retrospective study was conducted to present the picture of social sciences research produced by the authors affiliated to Pakistan and indexed in the Scopus source publications and journals. The Scopus database claimed to have a comprehensive coverage of bibliographical and citation records of more than 40 thousand source publications / journals (Elsevier, n. d.). The word “Pakistan” has been written in the main search box and “Affiliation” has been selected in the subsequent box. The time-span was selected from 1961 to 2019. Initially, the total number of documents in all subjects produced by Pakistan was figured out, after that the quantity of social sciences research was explored, to assess the share of social sciences research in national research productivity. The data of social sciences research was downloaded for analysis, later it was segregated by year, by preferred sources of publications, by broad subject areas, by contributing institutions, research collaborative countries, authorship patterns and its correlation with the number of citations. The results have been presented in graphic and table format. Microsoft Excel Spreadsheet has been used for calculation and SPSS software was applied to get the correlation between authorship patterns and the number of citations.

## FINDINGS

The authors affiliated to Pakistan produced a total of 186,070 documents in the Scopus index source publications and journals from 1961 to 2019 and the share of social sciences counted 9,292 (5%). One-fifth percent of the documents on social sciences are published in Open accessed sources while the other 80% of documents are published in standard subscription-based publications. Very sluggish progress of publications (n=690; 7.42%) has been observed in the last 39 years (1961-1999) of the 20<sup>th</sup> century. There was a single-digit and fluctuated growth of publications ranging from one to eight papers per year during the first 22 years (1961-1982). Only 89 publications were found in this embryonic period. Next 20 years (1983-2002), 857 publications were identified with an average of 43 papers per year. Almost 90% of the documents were published in the last 17 years (2003-2019). The increasing tendency has been found in this progressive era except the years 2012 and 2013. (Figure-1). This progressive journey started with 108 documents in the year 2003 and reached on 1,374 in the year 2019. Nearly three-fourth of the total documents (n=6921; 74.48) published in the last ten years (2010-2019).

**Figure-1; Distribution of documents on Social Sciences from 2003-2019**



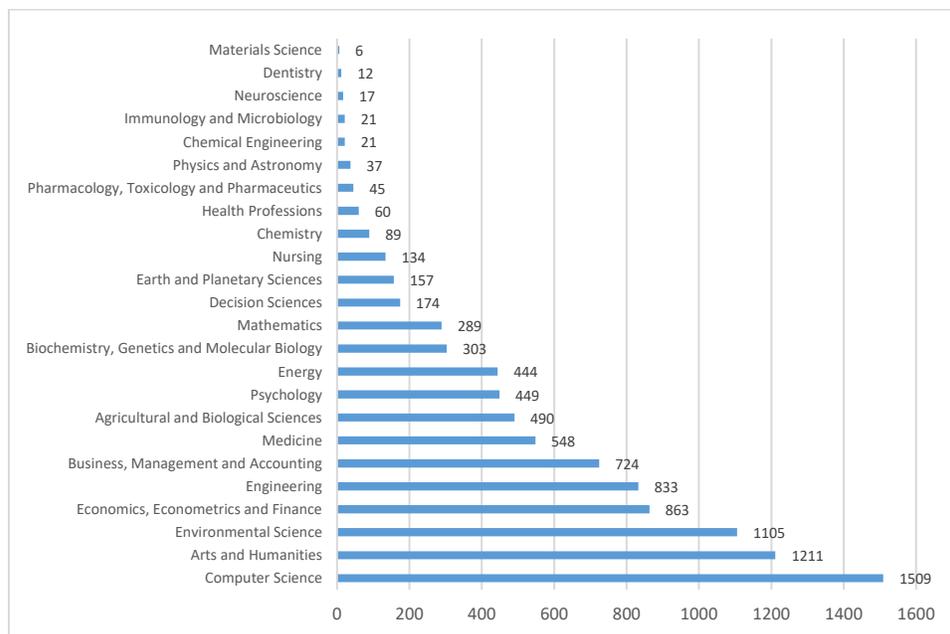
Amongst the top-10 most preferred source of publications, the maximum documents (n=1,067) were published in *Pakistan Development Review*, followed by the *Pakistan Journal of Life and Social Sciences* (n=202), *Sustainability Switzerland* (n=196) and *European Journal of Social Sciences* (n=180). One-fourth of the total documents (n=2312; 25%) were published in the top-10 journals/sources. One LIS journal, *Library Philosophy and Practice* falls on number seven with 113 documents. Seven journals are having more than one hundred documents each. (Table-1)

**Table-1; Top-10 most preferred sources of publications (1961-2019)**

S. No.	Journal/Source Publication	Documents
1.	Pakistan Development Review	1067
2.	Pakistan Journal of Life and Social Sciences	202
3.	Sustainability Switzerland	196
4.	European Journal of Social Sciences	180
5.	Proceedings of the Pakistan Academy of Sciences	163
6.	PIDE Working Papers	158
7.	Library Philosophy and Practice	113
8.	Mediterranean Journal of Social Sciences	89
9.	Quality and Quantity	79
10.	Asian Social Science	65

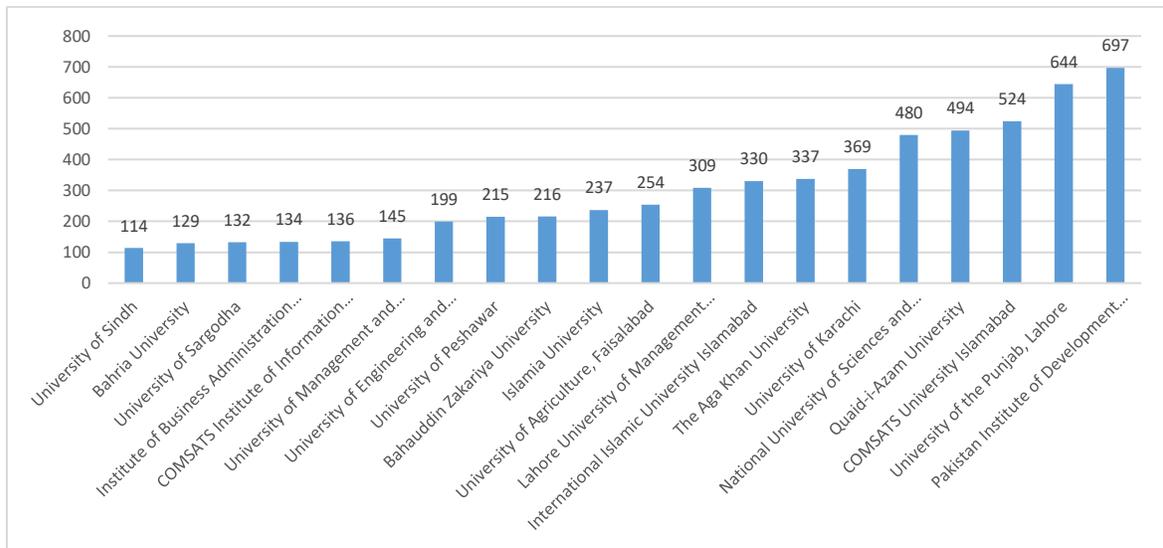
The Scopus database classified the social sciences documents produced by Pakistani authors into 24 categories (Figure-2). The research area of computer sciences (n=1509; 16.23%) has been on the top, followed by Art and Humanities (n=1211; 13.03%), Environmental sciences (n=1105; 11.89%), Economics, Econometrics and Finance (n=863; 9.28%), Engineering (n=833; 8.96%), Business, Management and Accounting (n=724; 7.79%).

**Figure-2; Distribution of documents by subjects (1961-2019)**



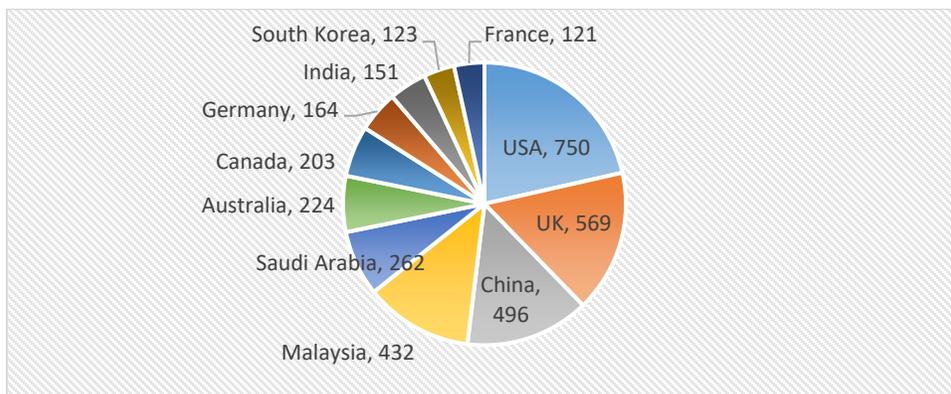
Pakistan Institute of Development Economics has been found a most contributing institution in the field of social sciences in Pakistan with 697 documents (7.50%), followed by University of the Punjab, Lahore (n=644; 6.93%), COMSATS University Islamabad (n=524; 5.63%). There are 25 institutions having the contribution of more than one hundred documents each, but 12 institutions produced more than 200 documents while only three institutions having more than 500 documents. (Figure-3).

**Figure-3; Top-20 Most contributing institutions on Social Sciences research in Pakistan (1961-2019)**



Pakistani authors collaborated with 134 countries of the world in social sciences research. A slightly more than half of the countries (n=71; 53%) collaborated less than ten documents each. The top-11 countries have more than 100 documents each as shown in the graph. The highest number of research collaboration (n=750; 8.07%) was done with the researchers of United States, followed by United Kingdom (n=569; 6.12%) China (n=496; 5.33%) and Malaysia (n=432; 4.64%). The majority of the Pakistani students have been getting their higher studies from these top four countries that's why the ratio of research collaboration has been on the high scale. (Figure-4).

**Figure-4; Most contributing countries on Social Sciences research in Pakistan (1961-2019)**

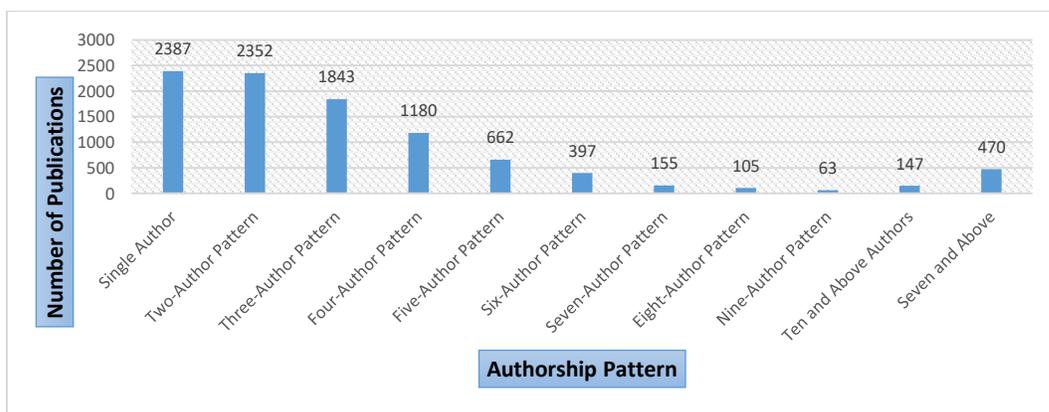


The analysis of source types revealed that 7,635 (82%) and 1,071 (11.52%) of the documents were published in journals and conference proceedings respectively. The share of book writing counted 512 (5.51%) and low scores have been recorded in contribution to book series (n=58) and trade journals (n=16).

The scrutiny of citations showed that all social science documents received 56,252 citations with an average of 6.05 citations per documents. The amount of citable documents has been slightly more than two-third (n=6,384; 69%) of the total. Further, it has been checked that, whether open accessed got more citations or subscription-based documents. A minor difference has been detected as open accessed publications received 11,085 citations with an average of 5.95 citations per documents while the subscription-based publications got 45,167 citations with an average of 6.07 citations per documents. Seventy-four percent of the open accessed publications were cited while 67% of the subscription-based publication received citations.

The single-author pattern (n=2,387; 25.68%) was dominated with minor difference of 35 documents two-author patterns (2,352; 25.31%). Interestingly, a little more than half of the publications (n=4,739; 51%) were created by either single or two-author patterns. The bulk of publications (n=7,764; 83.55%) were created by one to four-author patterns. The maximum numbers of citations (n=14,335; 25.31%) were received by two-author pattern but the highest citation impact, 20.40 citations per documents were found to 147 documents written by ten or more than ten authors. The correlation has been checked between the number of documents with authorship pattern and quantity of citations, a strong and positive correlation, 0.928572 has been found, increasing the number of authors in collaborative research probability getting more attention and citations.

**Figure-4; Distribution of documents on Authorship patterns (n=9,292)**



**Table-2; Authorship Patterns with number of publications and citations**

S. No.	Authorship Pattern	Publications (%)	Citations (%)	Citation Impact
1.	Single Author	2,387 (25.68%)	8,504 (15.11%)	3.56
2.	Two-Author Pattern	2,352 (25.31%)	14,335 (25.48%)	6.09
3.	Three-Author Pattern	1,843 (19.83%)	11,537 (20.50%)	6.26
4.	Four-Author Pattern	1,180 (12.69%)	8,536 (15.17%)	7.23
5.	Five-Author Pattern	662 (7.12%)	4,029 (7.16%)	6.09
6.	Six-Author Pattern	397 (4.27%)	2,930 (5.20%)	7.38

7.	Seven-Author Pattern	155 (1.66%)	1,835 (3.26%)	11.84
8.	Eight-Author Pattern	105 (1.13%)	769 (1.36%)	7.32
9.	Nine-Author Pattern	63 (0.67%)	764 (1.35%)	12.13
10.	Ten and Above Authors	147 (1.58%)	2,999 (5.33%)	20.40
	Total	9,292	56,252	6.05

Amongst the productive authors, only one author, Khalid Mahmood has more than 100 publications. He is the chairman of the Department of Information Management, University of the Punjab. Kanwal Ameen stands on the second rank with 83 publications, she is vice-chancellor of the University of Home Economics, Lahore. Rubina Bhatti, chairperson, Department of Library and Information Science, Islamia University of Bahawalpur is the third most productive author with 46 publications. The top-three authors belong to the subject area of library and information science.

## DISCUSSION

The subject area of social sciences has comprehensive coverage of topics, dealing with the attitude of the individual to the collection behavior of different groups of the society. The sub-categories of social sciences have become a major subject itself, like psychology, economics, political science, library and information science, etc. When we look at the research output of social sciences as compared to pure and allied sciences, we observed that only 6.43% of the worldwide research is related to social sciences. Pakistan produced 186,070 documents from 1961 to 2019, and the share of social sciences research counted of 5% with 9,292 documents. Very slow growth has been observed in the last four decades of the 20<sup>th</sup> century (1961-1999), but a gradually increasing growth has been seen in the last two decades. It is detected that the trend of acceleration in research publications has not only found in social sciences but in all areas of knowledge. Iqbal et al. (2018) explored that out of 149,510 publications produced by Pakistan from 1981 to 2015. Only 9,971 (7%) documents were found from 1981 to 2000 and 93% of the documents were published from 2001 to 2015. Similarly, Siddique et al. (2020) measured the research productivity of library and information science in Pakistan from 1957 to 2018 and found that 76% (n=991) of the publications were found from 2001 to 2018. In the present study, amongst the preferred sources of publications, *Pakistan Development Review*, an official publication of Pakistan Institute of Development Economics (PIDE) has been ranked first with 1,067 documents and the PIDE emerged as a most contributing organization in social sciences in Pakistan, followed by University of the Punjab, and COMSATS University Islamabad. The United States has been on the top in international research collaboration (n=750; 8.07%) in the current study, the other studies also depicted the same results in international research collaborating countries (Iqbal, et al. 2018; Haq, et al. 2019).

The majority of research identified the highest ratio of multi-author documents as Javed, et al. (2020) discovered that 983,875 authors produced 33,796 papers belong to 17 universities of Islamabad-Pakistan with an average of 29 authors per publication during the period of 2008 to 2017. Similarly, 93% of the total research by Shifa Tameer-e-Millat University, Pakistan was the result of research collaboration (Latif & Haq, 2020). But in social sciences research, the proportion single author pattern has been more prominent as Jan and Anwar (2017) revealed that more than half (56%) of the articles published in *Pakistan Development Review* during the period of 1973 to 2009 were the single author. Haq and Fouzan (2019) discovered that 57% of papers

were written by a solo-author in Pakistan Library and Information Science Journal for 2008-2017. In the present study, 25% of the total research was done by a single author pattern. The citation analysis uncovered the fact that collaborative research got more citations as compared to single-author publications. A strong positive correlation has been found with the authorship patterns and number of citations.

## CONCLUSION

The slow growth in social sciences research has been perceived in the first four decades because most of the social sciences departments were going through the transitional phase and the majority of higher education institutions were focusing on job-oriented disciplines; social sciences have been ignored. According to the United Nations (2008) report that there was 2.5% enrolment at tertiary education level during 2002 in Pakistan. After the restructuring of the Higher Education Commission of Pakistan after 2002, the tremendous growth of universities increased the students' enrolment, the establishment of the National Digital Library and the commencement of M. Phil and Ph. D. programs boost the research output. Now the government claimed in the recent statistics that 10% of the population are getting enrolled in higher education levels (Pakistan, 2020, p. 197). Although the situation of social sciences research has been improved, still lagging behind the other developing countries of the world. There is a dire need to revisit the research policy of social sciences and the provision of more necessary financial support to enhance research productivity.

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